

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method of investigating a sample comprising:
irradiating the sample with radiation having ~~at least one frequency~~ a plurality of frequencies
in the range from 25GHz to 100THz; and
detecting radiation that is scattered by the sample using a detector positioned relative to the sample such that the detector is out of a surface specular reflection path in order ~~so as to~~ reduce detection of specular radiation.
2. (Previously presented) The method of claim 1, further comprising analysing the detected radiation to determine a characteristic of the sample.
3. (Previously presented) The method of claim 1, wherein the detected radiation is substantially non-specular radiation.
4. (Previously presented) The method of claim 1, wherein the radiation detected is back-scattered radiation.
5. (Previously presented) The method of claim 1, further comprising positioning the sample so as to direct specular reflection away from one or more detectors detecting the non-specular radiation.
6. (Currently amended) The method of claim 2, wherein the analysing further comprises:
obtaining a time domain waveform from the detected radiation;
obtaining a frequency spectrum from the time domain waveform; and
deriving information characterising the sample from the frequency spectrum.
7. (Previously presented) The method of claim 6, wherein the sample is characterised graphically in a scattering spectrum.

8. (Previously presented) The method of claim 7, wherein the scattering spectrum is an average scattering spectrum.

9. (Previously presented) The method of claim 6, wherein the information derived characterises an internal structure of the sample.

10. (Previously presented) The method of claim 6, wherein the information derived characterises the granularity and/or density of the sample.

11. (Previously presented) The method of claim 6, wherein the information derived characterises impurities or defects in the sample.

12. (Previously presented) The method of claim 1, further comprising irradiating the sample at a number of points on the sample surface to obtain information characterising the whole sample or a region of the sample.

13. (Previously presented) The method of claim 1, further comprising raster scanning the sample so as to derive three dimensional distribution information characterising the sample.

14. (Currently amended) The method ~~Method~~ of claim 1, further comprising positioning the sample so that specular reflection is directed back towards an emitter configured to irradiate the sample.

15. (Currently amended) A use ~~Use~~ of the method of claim 1, in characterising a pharmaceutical sample.

16. (Currently amended) An apparatus ~~Apparatus~~ for investigating a sample comprising:

an emitter for irradiating the sample with radiation having a plurality of frequencies at least one frequency in the range from 25GHz to 100THz; and

a detector for detecting radiation that is scattered by the sample in a non-specular manner, which, in use, is positioned relative to the sample such that the detector is out of a surface specular reflection path in order so as to reduce detection of specular radiation.

17. (Canceled)

18. (Currently amended) The apparatus Apparatus of claim 16, wherein the emitter is positioned so as to, in use, irradiate the sample over a first region, which radiation is specularly reflected by the sample over a second region and the detector is positioned so as to receive radiation scattered by the sample over a third region, such that the third region is different to both the first region and the second region.

19. (Currently amended) The apparatus Apparatus of claim 18, wherein the third ~~regions~~ region does not overlap the first or second regions.

20. (Currently amended) The apparatus Apparatus of claim 18, wherein the second region is equal to the first region.

21. (Currently amended) The apparatus Apparatus of claim 16, further comprising one or more additional detectors for detecting non-specular radiation scattered by the sample.

22. (Currently amended) A use Use of an the apparatus of claim 16, comprising: in characterising a pharmaceutical sample.

using the emitter to irradiate a pharmaceutical sample; and

using the detector to detect radiation scattered by the pharmaceutical sample.

Claims 23-24. (Canceled)

25. (Currently amended) A method of investigating a sample comprising:
irradiating the sample with radiation having ~~at least one frequency~~ a plurality of frequencies
in the range from 25GHz to 100THz; and
detecting radiation that is scattered by the sample using one or more detectors positioned in
a region out of the angular range ~~to be expected by Snell's law for~~ of radiation ~~to be reflected from~~
the sample surface.